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THE JOURNAL OF EDUCATIONAL METHOD

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EDITORIALLY SPEAKING

HERITAGE AND THE TEACHER

Most teachers have a devotion to scholarship and an admiration for that fine culture which is the beneficent heritage from a line of educated ancestors. Hence instructors as well as the generality of other persons are apt to take for granted that not much may be expected in the way of what may be called literary response from the children of the unlettered folk, who come in such numbers through the door of the American public school. All too often teachers speak of what they might accomplish if they had pupils from more privileged homes; and this opinion prevails in spite of the fact that it has often been proved that the native power of children of parents who have had meager educational opportunities is frequently vigorous, keen, and even idealistic. Especially is it true that these fresh young minds respond readily to the inspiration of the discerning teacher who has personal resources in the way of accumulated stores from literature which she herself has known and loved.

We visited not long ago a school in a small residential city. It was evident that the children of this particular fifth grade were from homes where there were many books. The teacher told the visitor that it was quite the ordinary thing for the fathers of most of the children to be college graduates and for mothers to have college diplomas or to be graduates of select private schools. She told proudly of the high I Q's of her class, and yet the English papers written as the result of the development lesson were conspicuous for their limited vocabulary and their poverty of ideas. To be sure, the teacher was immature, unskillful, and, one felt, lacking in cultural reserves. No doubt with a teacher of experience and skill the results would have been far different.

In contrast to this is a school that has a fifth grade in which practically all the pupils are from non-English-speaking homes where there is little or no tradition of educational acquirement through schooling; yet the oral and written English exercises of these pupils are noteworthy for their originality and their good use of words. Occasionally from this class there is a short composition that has real distinction in fitness as well as in fluency of vocabulary. The children are a medium group, but—they have a teacher of unusual fineness, scholarship, and craftsmanship.

In this same building, in all grades, the boys and girls respond spontaneously and intelligently to the poetry that is presented

to them. They choose wisely the selections which they memorize with genuine enthusiasm.

As we contemplate some important factors in this great business of educating all the children of all the people, two truths stand out clearly and unmistakably. There is no caste in the mental potentialities of childhood; and whatever be the native equipment or social environment of any group of children, it makes a tremendous difference whether or not their teachers meet the opportunities as well as the responsibilities in the process of child development.

M. A. S. M.

WHAT THE SUPERVISOR CAN DO TO ENCOURAGE SCIENTIFIC ATTITUDE IN THE CLASSROOM[1]

ELMA A. NEAL
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There is a general belief in the educational world that advance in education must come through application of scientific methods in the classroom and through the use of tested materials.

Scientific method in education, as in the natural sciences, implies first-hand observation and study of significant facts and problems. Educators through these studies are seeking to find valid and conclusive answers to questions relating to the education of children, and to assist teachers to a better understanding of their problems. Clear thinking is stimulated and tested facts are substituted for mere opinions.

The encouragement of scientific attitude in the classroom is, perhaps, the highest function the supervisor can perform. This indicates that the supervisor's procedure must be accurate and in keeping with scientific progress in education. The ultimate purpose of supervision is the development and growth of the pupil; the more immediate concern of the supervisor is the improvement of classroom instruction. The supervisor's obligation to the pupil, then, is clear, for every child is entitled to the best that scientific study of education can produce.

It appears that the classroom teacher's big opportunity in the future lies in the field of research and an open-minded attitude of inquiry, for much of the work involved will be of a research nature or a careful adaptation of research to the needs of the school. The supervisor will necessarily furnish the expert guidance needed in carrying forward such a program.

The appeal of scientific method in education has become widespread. The movement in this direction has been in process for a number of years and as a result we are slowly evolving scientific procedures and an ever-growing body of tested facts. Nothing less seems to satisfy our present standards. Investigations in the field of reading illustrate clearly the care and exactness necessary in building up scientific curricula. Investigations in the field of spelling build a foundation in exact knowledge and clearly show that such studies involve tremendous labor. Objective studies in the social sciences are adding to the body of tested facts. A great amount of per-

[1] This paper formed the basis of Miss Neal's address before the National Conference on Educational Method at Dallas, Texas, March 1, 1927.

tinent research has recently been accomplished. A large number of detailed studies are yet needed to meet the present demand for tested curricula.

These accumulated researches are gradually producing changes and these changes are in turn making demands which are producing a new school. A constantly growing body of reliable thought is responsible for the essential character of modern life and for a changed mental outlook. Ability to think, and to test the correctness of thought before accepting it, is growing as never before. All these changes place a tremendous responsibility on the school and on those who are responsible for its growth and development.

Dr. Kilpatrick sums up the situation in his recent book, *Education for a Changing Civilization,* in which he says: "Education must face this highly unknown future. The factors which guide us are change, increasingly rapid change, experimental method, testing thought by results, methods approved by testing." This means a reorganization of school aim and procedure.

Because of the decline of family and community life, the school must become a place where real experiencing goes on. The subject matter of the curriculum must be selected and organized with the idea of providing a continuous and progressive series of experiences adapted to the level of the pupil's development. This new school must be a school of life, or real experiencing; it must be a school where pupils are engaged in worthwhile activities. The teacher must have a fine sympathy for childhood, knowing that growth can take place only through pupil activity, and is effected only as better and more adequate ways of behaving.

In the modern school, children are taught to think for themselves. It is only as they practice thinking and choice and responsibility for results, that they can learn to think for themselves, to choose, and to accept responsibility. That such aims are being accomplished is evidenced from the field of practice. Activities of intrinsic interest to the group are organized by the pupils themselves under the skillful guidance of the classroom teacher. Individual responsibility for the success of the activity is placed where it belongs, in the hands of the children. The aim is to build persons who are of strong character, who are socially minded, and who can govern themselves.

Much thinking and much experimentation are necessary to achieve these goals. The task of reconstructing educational thought and effort to meet present needs is great and can be accomplished only through the coöperative effort of all. Education on this level calls for expert guidance. It requires teachers of high professional standards, capable of leadership of the highest type.

Perhaps one of the most important factors which is helping to produce the new school is the development of school administration and supervision. Until recently supervisors were drawn from other professions, or from ranks of successful teachers. They assumed the larger responsibilities without special training for the position. Principles underlying wise and intelligent supervision had not been developed. Gradually, courses in administration and supervision have resulted in a more efficient organization and improvement of teaching conditions.

Only recently has a start been made in placing supervision on a scientific basis. Supervision has passed from the subjective or personal stage to an objective, analytical procedure more in keeping with scientific progress in education. Success in supervision calls for an art of the highest quality. Here we are dealing with the human element, which means that successful super-

vision is a highly socialized function, calling for inspirational leadership.

In a recent investigation, conducted by one of our leading teachers' colleges, personal qualities leading to appointment as supervisors were made a subject of study. The report gave the composite opinion of forty superintendents and resulted in the following tabulation in order of importance.

1. The supervisor must be able to work with people.
2. She must have initiative and understanding.
3. She must be able to supervise teachers. This implies successful teaching experience, expert knowledge, and ability to demonstrate her ideas or to select good teachers to demonstrate them.
4. She must have professional training of a high order.
5. She must stimulate teachers to do their best. This point implies attitude and might head the list, for without proper attitude success is not possible.

There have been two departures in modern supervision:

1. The supervisor shares with the classroom teachers responsibility for individual pupil progress.
2. Case studies of individual pupils are made through the use of statistical data. It follows, then, that a careful analysis of classroom procedure is necessary.

The idea is to educate to the limit of capacity. A responsible organization is needed to carry forward such a program. The modern supervisor does not impose her ideas on the teacher, rather does she encourage her to accept them through study of results involved. The teacher accepts this as a fair proposition. The shift is thus away from mere authority to a cooperative study of common problems.

The teacher's background is the supervisor's point of departure. Inexperienced teachers need definite guidance and broad sympathy and understanding. Experienced teachers often need renewed faith and vision. Continued growth is essential if the teacher secures the best results. The supervisor realizes she must contribute largely to such growth. Classroom procedures are studied in relation to pupil progress. Skill in teaching thus comes as a by-product of this study, rather than because the supervisor has aimed directly at the teacher's technique. Such a point of view has done much to encourage scientific attitude of both teacher and pupils in the classroom, and to establish a mutual understanding and respect between the supervisor and teacher. This means, also, that a careful study is made of the needs of her pupils as evidenced by all available data, such as social environment, individual health records, mental and achievement records, adaptation of materials to the needs and interests of her pupils.

Because of her function of sharing with the teacher responsibility for individual pupil progress, the supervisor gives each teacher opportunity for taking the initiative and experimenting in her chosen field. There is no more potent agency for vitalizing and dignifying the work of the classroom teacher than through methods of experimentation. Teachers of experience find outlet for their thinking and study. Materials and methods of instruction are tested with large numbers of children under varying conditions, adding greatly to the value of such studies.

One of the most pressing problems in the field of education involves adaptation of the curriculum to the non-English-speaking children of the lower grades. It is generally conceded that the first step in unifying our nation is to teach the non-English-speaking population English, as a basis for a loyal, unified citizenry. Granted the need of a common tongue, there is the

big problem of arriving at effective ways and means of teaching it to these children.

Because of our peculiar problems in Texas—the presence of large numbers of Mexican children in our lower grades, and children of Italian, Chinese, Japanese, Greek, and Armenian parentage—the need of reaching these children more efficiently was evident. Our schools were qualified to teach children their own language, but our methods were inadequate for teaching English to non-English-speaking children, the most difficult task of all. Our purpose in making this study was to furnish these children with a speaking vocabulary that they could use in their everyday lives, and to build a background of understanding that would enable them to speak and read English intelligently.

The study of this problem covered a period of several years and resulted in a tested body of materials and methods arrived at through a series of classroom experiments. The material had its origin in projects which grew day by day with the children, the teachers being carefully selected for this purpose. After the idea was spread into other schools, the rather free choice of activities gave rise to the need of grading the material to avoid overlapping. Today we have the primer, based on the child's natural interests and activities; the first reader, based on the child's home life; and the second year series, based on the child in relation to community life.

The direct method—the use by the teacher of the English language in teaching English—was emphasized. This method calls for direct association between the object and the English word, as

pencil → *pencil*

not

pencil → *lapiz* → *pencil*

The results of these experiments, in addition to revolutionizing our curriculum in non-English schools, stimulated the professional growth of our teachers in a very gratifying way.

The teaching profession is concerned with two things: the materials which we call the curriculum, and the processes which we use in putting it into effect. The wisest method of teaching, and the most effective, is the one which conforms most closely to the way a child learns. This we kept in mind in carrying forward these experiments.

Another experiment far reaching in its effect involved the organization of a program of teaching silent reading in the fourth and fifth grades.[2] Five methods were chosen for special emphasis, namely: (1) finding, by skimming, answers to fact questions given before reading; (2) finding answers to fact questions given after reading; (3) finding answers to questions that require the organization of the thought of several sentences, paragraphs, or even pages; (4) finding titles to paragraphs; and (5) outlining. Committees were appointed to devise means of developing each of these methods. The Thorndike-McCall Reading Scale was administered at the end of the first and second terms of 1924-25 and 1925-26. The results indicated a gain of one full point on the scale. Increased interest and efficiency in the teaching of silent reading has resulted from this study.

A controlled experiment in common fractions is now in process which aims to provide an organization of subject matter that will prove economical to the classroom teacher and provide practice material for the child in order that he may work on his own difficulty rather than on general practice.

[2] This experiment was reported in the *Elementary School Journal*, December, 1926.

These experiments serve to indicate types which the teacher can share with the supervisor, in the development of scientific curricula. Such experiments afford the supervisor one of her best means of encouraging scientific attitude in the classroom.

In summary: What can the supervisor do to encourage scientific attitude in the classroom?

1. She can be democratic and social in her attitude toward the teacher.
2. She can share with the teacher responsibility for growth of the pupil.
3. She can show the teacher how to use objective data as a basis for diagnosing the needs of her pupils.
4. She can make teachers aware of possibilities and means of growth.
5. She can acquaint teachers with materials resulting from educational research.
6. She can set up experiments which involve experienced teachers and in turn give definite guidance to the inexperienced teacher.
7. She can adapt her supervision to meet the varying needs of individual teachers.

"The teacher's and supervisor's work thus becomes a fascinating study of children, how they learn, and the materials best adapted to their needs. Teaching takes on new dignity. Its scope is broadened, its meaning is enriched. No other calling can be compared with it. It is the great adventure."

TRAINING FOR THE PROFITABLE USE OF LEISURE

HARVEY C. LEHMAN AND PAUL A. WITTY
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The necessity of training for profitable use of leisure has for some time been emphasized by thoughtful students of education.

The proper enjoyment of one's leisure time deserves large consideration in a scheme of education for persons that do not have to spend all of their time in a struggle for existence. Certainly for a large part of any well-civilized community the problem presented by training for leisure is almost as pressing as the problem of training for efficiency.[1]

It is just as essential to a stable social order that the individual should know how to spend his recreational hours as it is [that he should know how] to spend his vocational hours.[2]

According to Bobbitt, the first step in curriculum construction is that of analyzing the broad range of human experience into its major fields. The major fields of human action having been defined, the second step in curriculum construction is that of analyzing these fields into their more specific activities.[3]

After this work has been done, evaluation of the worth of the specific activities proceeds. Bobbitt suggests, then, that that part of the curriculum which has to do with training for the profitable use of leisure be made up of the worthwhile activities to which human beings spontaneously turn. The plan

[1] Parker, Samuel Chester. *Methods of Teaching in High Schools.* Ginn and Co., 1920, pp. 17 f.
[2] Garber, J. P. (Quoted by S. C. Parker, *op cit.*, p. 234.)
[3] Bobbitt, Franklin, *How to Make a Curriculum.* Houghton Mifflin Co., 1924, pp. 8 ff.

posits, of course, concentrated attack upon the elimination of various undesirable activities.

Bobbitt's procedure for making curricula is based upon the assumption that education is a matter of human *experience* rather than a matter of textbook memorization followed by lesson hearing. It is Bobbitt's contention that education is not something that can be imposed from without. Education and understanding grow up out of practical experience. He holds that "activities and experiences are the curriculum."[4]

Briggs has asserted that the school should teach the child to do better the desirable things that he will do whether he be instructed or uninstructed regarding the best ways of doing them.[5] It seems logical that the duty of the school is to so train a child that he will not only be equipped to take part in the experiences of the world of actuality but will be prepared to modify these experiences so as to promote human welfare.

Curricula construction approached from this point of view posits a marked revision in educational objectives. At the present time the progressive teacher seeks not only to teach informational material but also to develop desirable ideals and attitudes. The value of non-functioning knowledge is being seriously questioned. Classroom instruction must be evaluated in terms of its power to modify pupil-conduct.

It is clear that in such an educational program the first step must be to ascertain what pupils of various ages actually do outside the classroom. One part of such an accounting requires a careful compilation of the activities to which children spontaneously turn in their leisure. These activities constitute the play life of the child. To make desirable modifications in conduct, it is first necessary to know what children actually do now. The following pages point out certain activities in which children frequently take part outside the classroom.

METHOD

Over 5,000 children were asked to check from a comprehensive and catholic list of play activities only those in which they had voluntarily engaged during the preceding week. The directions were specific, the teachers were instructed in giving the tests, and the data were obtained from unselected pupils in order that the results of the investigations might be reliable. Data were secured from children in the following Kansas towns: Kansas City, Lawrence, Bonner Springs, and Moran. Individuals included in these investigations, of ages 17½ to 22 +, were for the most part students of the University of Kansas.

In order that seasonal differences might be taken into account, the list was checked by the above groups on each of three different dates, November 7, 1923, February 20, 1924, and April 30, 1924. The same list of activities was checked on each of these dates and the same procedure in administering the test was used at each testing.

In order to discover such differences as might exist between rural children and city children, the list was similarly checked in certain one-teacher rural schools, each having an average attendance of less than twenty-five pupils. These rural schools were located in Shawnee, Douglas, and Franklin counties (Kansas). Owing to the difficulties involved in administering the list to these isolated pupils, the list was not administered during the three seasons.

[4] Bobbitt, *Ibid.*, p. 44.

[5] Briggs, Thomas. (Quoted by Joseph K. Van Denburg in *The Junior High School Idea.* New York: Henry Holt & Co., 1922, p. 4.)

The rural pupils checked the list in the fall of 1924. To verify the initial findings, the rural pupils were again asked to check the list in the fall of 1925. Additional data were secured from 6,000 pupils of Kansas City, Missouri, in January, 1926, and the reliability of the earlier findings was further verified. The total number of pupils from whom data were obtained is indicated in Table I.

TABLE I—NUMBER OF PUPILS INCLUDED IN THE PRESENT STUDY

Ages	Nov. 1923	Feb. 1924	Apr. 1924	Nov. 1924 (Rural)	Nov. 1925 (Rural)	Jan. 1926 (White)	Jan. 1926 (Negro)
			Boys				
8½	98	90	80	89	35	100*	39
9½	169	161	144	102	45	100	75
10½	182	169	160	102	67	100	94
11½	187	167	184	106	65	100	104
12½	249	201	176	101	79	100	80
13½	280	231	259	93	70	100	48
14½	274	252	238	67	50	100	40
15½	230	247	247	46	22	100	...
16½	210	181	193	...	...	100	...
17½	145	130	146	...	...	68	...
18½	115	170	130	...	...	22	...
19½	95	119	102	...	...	...	...
20½	50	73	59	...	...	...	...
21½	53	57	43	...	...	...	...
22+	79	105	68	...	...	...	...
			Girls				
8½	100	97	99	85	39	100*	48
9½	174	139	144	85	49	100	90
10½	215	199	176	103	53	100	123
11½	235	222	220	109	64	100	114
12½	326	289	266	83	69	100	110
13½	269	235	263	89	57	100	91
14½	301	282	278	68	35	100	71
15½	261	244	256	27	21	100	34
16½	251	223	235	...	...	100	...
17½	182	208	193	...	...	100	...
18½	120	174	167	...	...	50	...
19½	101	115	93	...	...	...	...
20½	73	124	76	...	...	...	...
21½	41	85	66	...	...	...	...
22+	44	114	88	...	...	...	...

* Data were assembled from a much larger number of white children in Kansas City, Missouri, but it was decided that 100 cases would be sufficient to provide a fair sampling of the returns.

SOME SIGNIFICANT RESULTS

One of the activities in which the children studied most frequently participated was "reading the newspaper."[6] It is significant and vital, therefore, that the school recognize this fact and utilize it in curriculum construction. It seems sensible that the school should educate children to engage *more profitably* in this activity.

Another activity of high frequency was "going to the movies." Over 50 per cent of individuals of ages 8½ to 22 + reported that they had gone to the cinema at least once during the week preceding the several investigations. It is obvious that there is a danger as well as a possibility of value accruing from moving-picture show attendance. The school should turn this activity to good account.

Another important result of the investigation was the conspicuous fact that children at particular ages tend to engage in certain activities very frequently. One example only of this phenomenon will be given and the implications for education pointed out.

One of the activities included in the list was "playing with hammer, saw, nails, etc., for fun." Table II shows the percentages of boys and girls of various age levels who indicated that they had engaged in this activity during the week preceding the investigations. Marked seasonal differences were not revealed by the data. This fact was clearly shown in the data obtained from the investigations of November 1923, February 20, 1924, and April 30, 1924, these three investigations having been made among identical groups of children. The similarity of the results obtained from each of the three investigations was striking.

Sex differences are large, the girls using hammer, saw, nails, etc., for fun, much less frequently than boys of the same ages. This tendency is consistent in each of the three studies.

The data presented in Table II show further that the older individuals included in the study use a hammer, saw, nails, etc., for fun, much less commonly than the younger ones. The transition from age to age is, however, *gradual*. The relatively slight extent to which the older individuals engage in this activity may be due in part to the fact that the older persons are university students.

The conspicuous and vital fact herein presented is that fully fifty per cent of the boys of ages 8½ to 13½ used hammer, saw, nails, etc., just for fun during the course of the single week preceding the several investigations. Boys older than 13½ engage less frequently in this activity. Comparable data were not obtained for boys younger than 8½.

It seems that if education is to be life and not a preparation therefor, this activity should be *stressed* in the curriculum at ages 8½ to 13½. The values of such a procedure are apparent. Boys *will* use tools at these ages. They probably find considerable pleasure in so doing. Unguided use and lack of preparation for use may result in waste of materials, deleterious habits, and undesirable attitudes. To profitably utilize this spontaneous tendency at the time when it is most conspicuous is therefore the obligation of the educator. The writers offer this one example of the utilization of a spontaneous tendency at certain age levels to illustrate a necessary procedure in curriculum construction.

Another important finding of the survey merits emphasis. There is a danger that curricula will be based upon investigations made in which past generations have been used as subjects. The case of collecting and

[6] Lehman, Harvey C., and Witty, Paul A., "Newspaper vs. Teacher." *Educational Review*, February, 1927, pp. 97-102.

TABLE II—PERCENTAGES OF BOYS AND GIRLS OF VARIOUS AGE-LEVELS WHO INDICATED THAT THEY HAD BEEN "USING A HAMMER, SAW, NAILS, ETC., FOR FUN" DURING THE COURSE OF ONE WEEK PRECEDING THE INVESTIGATIONS

Ages	Nov. 1923	Feb. 1924	Apr. 1924	Nov. 1924 (Rural)	Nov. 1925 (Rural)	Jan. 1926 (White)	Jan. 1926 (Negro)
			Boys				
8½	59	56	59	48	54	41	49
9½	64	62	63	48	49	53	50
10½	58	60	61	65	66	47	57
11½	60	50	48	67	69	47	53
12½	59	57	54	71	57	52	54
13½	49	58	54	72	67	53	48
14½	45	44	42	63	60	39	35
15½	27	28	29	52	60	35	48
16½	23	25	24	*	*	29	*
17½	12	14	20	*	*	21	*
18½	10	7	15	*	*	*	*
19½	5	5	7	*	*	*	*
20½	6	5	6	*	*	*	*
21½	6	5	4	*	*	*	*
22 +	4	3	1	*	*	*	*
			Girls				
8½	14	6	4	25	15	6	10
9½	14	4	12	27	22	6	9
10½	17	13	12	40	17	4	12
11½	14	7	12	29	25	7	8
12½	13	11	12	28	17	5	5
13½	11	6	9	25	18	6	7
14½	9	5	9	35	20	6	3
15½	6	6	5	26	24	5	9
16½	4	2	3	*	*	2	*
17½	3	4	3	*	*	4	*
18½	5	2	1	*	*	*	*
19½	0	4	1	*	*	*	*
20½	0	2	0	*	*	*	*
21½	2	1	0	*	*	*	*
22 +	2	0	0	*	*	*	*

* No data assembled.

hoarding is in point. Writers insist upon the utilization of this proclivity in curricula planning. The investigation of C. F. Burk is pointed to. This investigation was made in 1900. The writers have found that children *now* engage much less frequently in this activity than in 1900. According to Burk's data, ninety per cent of

the boys and ninety-one per cent of the girls were actively making collections at the time of her investigation.[7] The present writers found hardly ten per cent of children of either sex doing so.[8]

It is important, therefore, that makers of curricula ascertain by some technique the activating interests of present-day children. The writers feel that the technique employed in this investigation is a usable one for obtaining reasonably accurate information in this regard.

MAKING AN ENGLISH COURSE OF STUDY IN ANNE ARUNDEL COUNTY, MARYLAND

M. Clarice Bersch
Supervising Teacher, Anne Arundel County, Maryland

Explanatory Note.—The outline published below is an extract from the annual report of Miss Bersch to State Superintendent Albert S. Cook. Last year was Miss Bersch's first year in Anne Arundel County, although she had spent the three previous years as supervisor in another Maryland county.

There is no state course of study for the elementary schools of Maryland. Each of the twenty-three counties under the leadership of a county superintendent and county supervisors is making its own course of study. The State Department, in coöperation with the counties, sets up goals in the various school subjects which are suggestive for each county in the development of its course of study.—I. Jewell Simpson, Assistant State Superintendent in Maryland.

I. Factors affecting the work undertaken.
  A. Why it was decided upon.
    1. The State Department for years has favored the making of local courses of study as valuable instruments of supervision.
    2. There has never been a county course of study of the type desired.
    3. Baltimore County finds it necessary at all times to be revising its course of study, which this county uses, and this reflects discreditably upon us in any of three ways: The county is unequal to the creation of a local course of study; it is passively indifferent; or it has never realized the value which comes to teachers through the process of making, or remaking, such a teachers' handbook. The latter hypothesis seemed most plausible and was the prime factor entering into the final decision.
  B. Scope of the work proposed.
    1. All teachers, according to ability, to be participants.
    2. Three subjects—geography, arithmetic, and language—to be tentatively completed during the year, the work to be divided by subjects, with the superintendent and each of the two supervisors responsible for one subject only.
    3. By the superintendent's preference, the work in English was to include

[7] Burk, Caroline Frear, "The Collecting Instinct." *Pedagogical Seminary*, July, 1900.
[8] Lehman, Harvey C., and Witty, Paul A., "The Present Status of the Tendency to Collect and Hoard." *Psychological Review*, Vol. 34, No. 1, January, 1927, pp. 48-56.

language only, leaving reading, spelling, and literature for later treatment.

C. Types of schools involved.
   1. Twenty-four one-teacher schools.
   2. Twelve two-teacher schools.
   3. Fifteen graded schools.

D. Teacher preparation for participation.
   1. About 15% experienced teachers of second and third grade certification.
   2. About 85% trained teachers.
   3. All experienced teachers have used the Baltimore County Course of Study for years.

E. Conditions which did not promise best results.
   1. The magnitude of the work was not fully realized.
   2. The supervisors were inexperienced in the work and uncertain of *best* procedures.
   3. Three courses of study undertaken in one year caused a broad overlapping of supervisory responsibility.
   4. High school students in their regular commercial work had to be relied upon for all necessary assistance in mimeographing.
   5. The supervisor's responsibilities in typing, mailing, receiving, checking, filing, etc., without office assistance tended to lower the quality and quantity of good features to be considered.
   6. Teachers had no experience in doing work of the kind.
   7. Practically every teacher carried a heavy teaching load, a v e r a g i n g around forty pupils, and had little time to spend in recording ideas for a course of study.
   8. Any committee work found necessary must be scheduled out of school hours.
   9. Committee work promised to be difficult because of the large territory represented. Only a minimum could be hoped for.
   10. The incoming supervisor could not enter fully into local colorings at once, nor feel that her time and energy would be most valuably directed at all times because of the entirely new situation.

F. Encouraging factors looking toward success.
   1. Experienced, good t e a c h e r s were found "wondering why we had always had to use somebody else's course of study."
   2. The question of undertaking the work was left with the teachers and, by their unanimous vote, adopted.
   3. Every teacher was given her choice in contributing to either arithmetic, geography, or language and in one grade only.
   4. The superintendent provided funds for necessary study texts in each of the three subjects and any other incidental expenses which would materially further the work.
   5. The esprit de corps was gratifying indeed.

II. Supervision through making the language course of study.

A. Increasing the supervisor's fitness for leadership.
   1. Through practical consideration of a situation to be met.
      a. Redirected the outcomes of a previously planned series of group conferences to meet the emergency.
      b. Studied the situation most carefully in the light of the information at hand as to the number of persons available; the fitness of each for simple participation, special contributions, and leadership; the possible working groups which might function throughout the year.
      c. Carefully sorted all office supplies, selecting for ready reference those found helpful in the language work.
      d. Helped decide what additional equipment would be necessary and ordered this.
      e. Thought through a plan of procedure which (under the circum-

stances) seemed to promise the maximum benefit to teachers without making their responsibilities unduly burdensome.

2. Through pre-planning the year's work in considerable detail.
   a. Grouped all teachers according to their preference for general or specific committee work:
      General committee chairman, supervisor.
      Assistant general chairman, capable language teacher.
      Chairman for grammar grades with assistants for each grade.
      Chairman for intermediate grades with assistants for each grade.
      Chairman for primary grades with assistants for each grade.
      Each teacher of the group (76) assigned work for one grade.
   b. Provided teachers with uniform blanks for reporting the following materials at stated intervals during the year:
      Language goals attained within the period.
      Sources of language materials used.
      Activities of children requiring the use of language.
      Composition topics actually enjoyed by children.
      Language errors characteristic of grades.
   c. Explained to teachers the nature of assistance which would be expected of them:
      Do simple testing as directed from time to time.
      Send in reports on the prepared sheets upon the dates mentioned (four during the year).
      Contribute three lesson plans—a development, a drill, and one other.
      Save for us simple types of graphs in use.
      Send in informal tests which proved valuable.
      List popular devices, games, exercises, and methods.
      Help grade and analyze a set of test papers at least once during the year. (Papers representing the entire group for the grade.)
   d. Outlined the work of special committee members:
      (1) General chairman and assistant:
         Scan all available books on the teaching of language.
         Prepare study guides for same to be passed on to and revised by other committee members.
         Meet chairman of committees to discuss features to be included and the technique of expression.
         Scan all materials submitted.
         Encourage valuable experiment with simple, practical activities.
         Collect good things found in the classrooms.
         Edit the course of study.
      (2) Chairmen of departments and their assistants:
         Meet the general chairman or her assistant in study groups.
         Study and discuss with other teaching groups at least one text and one course of study; more, if possible.
         Know the needs, activities, methods, etc., of the department.
         Organize and report upon these to the general chairman.
         Direct grading of test papers and their analysis.

Select typical ones for the general chairman.
List weaknesses apparent in written language tests by grades.
Judge informal tests submitted.
See that every teacher contributes something. Investigate failures to do so.

e. Distributed the booklet, Goals in Composition, prepared by the assistant state superintendent, to all teachers with instruction for use.

f. Prepared and distributed a guide to study of the professional books loaned to teachers.

g. Tentatively planned for a series of group teachers' meetings to be held during the year to unify and strengthen the committee work:
First series—November 3, 4, 5, 6.

Program

10:00-11:00 A.M. Showing the need for a course of study and directing observation of the demonstrations to follow.
11:00-12:00 A.M. Two, or three, grade demonstrations in the teaching of arithmetic designed to show:
1. Lesson types.
2. Principles of teaching.
3. Attainment of goals in evidence.
4. Comparison of observed attainments with teacher's own progress.
1:00-2:00 P.M. Critique culminating in the setting of goals and steps toward their attainment.
2:00-3:00 P.M. Discussion of problems involved in making our course of study and the plan of action.

Second series—February. Analyze achievement to date, goals, informal tests, testing, activities, and methods. (This meeting was actually held January 22.)
Third series—April-May. Reports by committees, discussions by grades, final selection of materials. (These meetings were held March 10, 11, 12, 15, 17, 19 and 22.)
Final meeting—June. Group adoption of the year's offerings. (This meeting was displaced by unusual and unforeseen testing.)

h. Submitted first rough plans to the assistant state superintendent and detailed procedure as given above to a curriculum expert of Teachers College under whom the work has been carried on.

3. Through directed and selective study.

a. Scanned all tests, bulletins, magazines and mimeographed articles bearing upon the teaching of English which were in the office.

b. Reviewed bibliographies for other materials and consulted specialists for advice. Read new material as secured and used it for constant reference.

c. Read tests on curriculum construction *comparatively;* so also for aims in education; for aims in language teaching; for goals by grades; courses of study; methods of teaching; and series of pupil textbooks.

d. Studied all available classroom texts for information about the teaching of formal grammar: when to introduce it; what terms to use; how to introduce it; how much to give.

e. Gleaned from all available sources best methods in teaching the following materials of language; outlined these; typed them; and distributed them to teachers with instructions for experimental use, appraisal, and adoption or rejection as good or poor:

Language possibilities in dramatization.
Opportunities for directed language growth.
Original story telling from pictures.
Methods of developing poems to be memorized.
Methods of developing a written paragraph.
Topics for conversation by grades.

f. Evaluated lesson plans submitted and discussed drill, test, and review types with grade groups.
g. Attended N. E. A. sessions featuring course of study making for three days. Also attended three series of State Supervisors' meetings each treating practical problems in the making of a course of study.

4. Through actual work in the field.
   a. Classroom teaching has been observed with especial regard for incidental and purposeful language training.
   b. Promising bits of teaching have been commented upon favorably and suggestions offered for reporting it for our course of study.
   c. A broader basis for classroom observation has enabled the supervisor to see more in a lesson procedure and to give more thoughtful attention to details.
   d. A steadying consciousness of underlying principles in the teaching of language is emerging from the confusion of mottled devices, methods, and personalities which have heretofore proved so distracting.
   e. Questions coming from teachers as to which method is better, how certain difficulties shall be overcome, and what would be a good reference have certainly been met with greater ease and confidence because of the parallel work going on.
   f. A spirit of comradeship has grown up in committee meetings which could not otherwise have arisen. It has been most wholesome and helpful to both teacher and supervisor.
   g. The common objectives and interests have led many teachers to look forward with especial desire to the next supervisory visit. Questions and materials were prepared by the teacher in advance and she was in the right attitude for receiving the greatest amount of good from a brief conference.
   h. The informal discussion of contributed materials in grade groups has created pride in the showing by schools, or by classes.

2. Through consciousness of personal failures.
   a. A few teachers discovered through study and group discussions that some of the things they "had always thought," or "always done" were generally discountenanced.
   b. The guides to good methods prepared and sent to teachers for experiment and opinion stimulated many comments and requests for assistance in the classroom.
   c. The first set of reports sent in and turned over for committee analysis proved conclusively to every participating teacher that the work being done reflected no consciousness of definite grade responsibility. The majority of contributors found their own reports could not be used because of faulty organization and poor mechanical treatment.
   d. The small grade committee groups in selecting from the mass a few typical compositions and justifying their selections have been impressed with certain failures among their own pupils and have in most instances admitted an unconsciousness of the needs or weaknesses of their pupils.

e. A few teachers have frankly said, "I do not know how to teach a certain thing," and have asked for assistance.

3. Through timely assistance and just recognition.
   a. The supervisor in several instances was asked to watch a teaching procedure and express a candid opinion of its worth.
   b. In numerous instances teachers, having scored and evaluated their contributions to the course of study, have withheld them until the supervisor came to have her opinion as to their efficiency in analyzing materials.
   c. Requests for help, when justified, have, with one exception, been met as fully as possible.
   d. The supervisor has planned in minute detail, either with or for the teacher, any special contribution for the benefit of the group or any duties of leadership within the group.
   e. Teachers have been prodded to think for themselves when they have shown a disposition to rely passively upon the judgment of the supervisor.
   f. Good bits of teaching have been recognized and commended. In cases where such teaching could be reported for the course of study, teachers have been encouraged to feel that they may be of real value to their fellows in sharing good things with them.
   g. Teachers who are making good in any special phase of work have been asked to consider and advise the incorporation of suggestions in the course of study.
   h. Certain schools and certain individuals have characterized themselves by prompt, valuable, beautifully neat reports and have been publicly commended upon the quality of their contributions.
   i. The generous expenditure of time, study, and thought by the majority of teachers upon this extra activity of the year has been truly wonderful to the supervisor and her appreciation has been freely expressed.

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ACTIVITY CURRICULA AND INDUSTRIAL ARTS

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Two books have been issued as examples of activity curricula for children of kindergarten-primary grades. These are *A Conduct Curriculum,* by teachers of the Horace Mann School, New York,[1] and *An Activity Curriculum,* by Ethel I. Salisbury and the staff of the training school of the Southern Branch of the University of California at Los Angeles.[2] Numerous private and public school curricula have also appeared containing some provision for more or less work on an activity basis. Practically all of the leaders in curriculum making in this country advocate as desirable and helpful the use of activities as a means both for bringing about a better organization of teaching materials and for the improvement of teaching. Among the items agreed upon by the Committee of the National Society for the Study of Education reporting in the second part of the Twenty-Sixth Yearbook, for 1927, is this: "The curriculum should be conceived, therefore, in terms of a succession of experiences and enterprises having a maximum of lifelikeness for the learner." If the accepted purpose of education were primarily the learning of specific subject matter, then it would be entirely consistent to organize curricula on a subject-matter basis. But the present-day purposes of instruction are not primarily the learning of dissociated subject matter. Consistency requires that the materials of instruction be organized about the accepted purposes of education. That some kind of an activity or conduct curriculum will soon be found in every school that is attempting to utilize the conception of present-day progressive education seems assured.

Briefly stated, an activity curriculum is one in which various kinds of experiences involving physical and mental activity contributing to growth in desirable traits and forms of behavior constitute the educational program. The unit of growth becomes the educative experience instead of an item of subject matter assigned to be learned. Subject matter, in the sense in which the term has hitherto been used, finds its place in helping to carry on or to further the activities. The plan of procedure in school thus becomes closely identified with good procedure in life outside of school. In daily life, we proceed by entering upon various kinds of activity and using such matter from arithmetic, or spelling, or geography, or history, or industrial arts, or science as each activity requires for its successful pursuit or outcome. As life is made up of experiences in various kinds of practical work—investigations, social contacts and intercourse, coöperative enterprises, reading, writing, listening to music, singing, and other forms of play or work—so the activity curriculum provides a selection of such activities so organized as to promote growth, evoke desirable interests, and cultivate ideals and conceptions of worth in pursuing these life purposes. Differing from a subject-matter curriculum dealing with ideas *about* these activities, it *provides practice* in the activities themselves. When well organized, it provides ade-

[1] Published by Scribner's.
[2] Published by Harr Wagner, San Francisco, Cal.

quately for the specific activities in mastering the tool processes of reading, spelling, writing, and arithmetic as the needs for these are revealed and motivated by the experiences in which their uses are required. The appropriately organized activity curriculum not only provides for the learning of desirable subject matter, but also for learning its meaning and uses through using it.

An interpretation of the activity curriculum that is incomplete and inadequate has placed some very unfortunate limitations upon its development. This erroneous conception holds that the activity or conduct curriculum applies chiefly to the kindergarten and primary grades and that it is adaptable to the upper elementary grades or the high school in but a very small degree. This limited view is probably the result of interpreting activity to mean physical activity only, and to the seeming difficulty of using activity as a means of learning the content of the school subjects as they have been organized for upper grades and high school. There are those among both teachers and parents who seem to think that almost anything that will keep younger children busily and happily occupied is worthy and satisfactory. But after the third grade is passed, then, say these teachers and parents, "the children should get down seriously to business at learning subject matter in books, reciting this subject matter, and passing examinations upon it."

Now activities may be intellectual and emotional as well as physical. Increasingly as children grow older, under good leadership they will find interest and satisfaction in intellectual and emotional experiences that are not so directly correlative with physical activities as in early childhood. Impulses to activity do not diminish as we pass up the grades under wholesome conditions, but they do change somewhat in their dominant forms. In the development of muscles and physical controls, the order is "from fundamental to accessory"—first the large, gross trunk and limb movements, and gradually the more refined, better coördinated controls and uses of forearms, wrists, fingers, and lower limbs. So, also, the development of mental life is from "fundamental to accessory." For the older pupils and students, the inquiries and investigations, the coöperative enterprises, and the recreational projects of one kind or another, requiring for their pursuit the use of subject matter from mathematics, science, history, literature, art, and music, are just as much activities as are the making of doll houses or the dramatizing of stories by primary children.

There is, therefore, no valid reason for not making activity curricula for every level of education. It may be more difficult to reconcile the conception with the use of the highly organized subject matter of the upper grades and high school years to which we have all been habituated in the past than with the greater freedom that has developed in the primary grades. For all levels of the school, the sources of the stimulations to activity lie alike in the interaction of learners and their environment. Life itself, with its work and play, its institutional and social enterprises, its heritage of customs and experiences, its problems and its conflicts, is the source from which the school experiences must be selected if they are to be educative. To engage adequately in the most important of the wide range of experiences representing a well-balanced life will require all of the subject matter of the several studies that has any significant, measurable value. In developing an activity curriculum for higher grades, we need have no fear that any important subject matter will be omitted if the curriculum is representative of the important aspects of an abundant

life. This conclusion should be axiomatic, for what basis have we for measuring the values of subject matter other than its use in serving the purposes of life?

Activities of life that are significant are not, to any large degree, a question of opinion but of fact. They are revealed by analysis—by looking about and finding what people, children and adults, are doing and striving to do. Rating the relative importance of the activities found is less easy, since the element of selective judgment does enter in because measurements of value must be referred to aims or ideals which are, to a considerable degree, matters of opinion. The tendency seems to have been to rate questions of a political and literary nature as next in significance after those relating to the tool subjects—the three R's—which have, with few exceptions, received first place. Those activities which have the most immediate and direct survival value in terms of health, standards of living, occupational and community coöperation, and use of spare time have either been rated lowest in the scale, or it has been assumed that they are so well provided for outside of school that little provision needs to be made for them in school. The latter explanation is the more charitable, so let us accept it as accounting for the small place these activities have had in the schools. But that the assumption is wrong, we can not doubt when we observe the failures and the unnecessary sickness, the poverty and the exploitation, the crime and the low standards of recreational interest all about us. Let us hasten to emphasize that urging attention to these matters does not mean that the tool subjects—the reading, writing and arithmetic—are to be neglected. They are, of course, essential and must be taught, and taught well. The processes of learning them and using them are types of activity.

Industrial arts as a school study consists of activities through which we deal directly with the health, economic, appreciative, and social values derived from considering the production and use of the material supplies by which we maintain daily life. It provides such activities, mental and physical, as bring out values of both personal and social importance relative to food, clothing, shelter, utensils, and other material products which afford us the necessities, the comforts, and many of the luxuries of life.

This study of the industries as it is developed today must not be mistaken for the old-time manual training, domestic science, and domestic art. These emphasized chiefly manipulative activities with paper, clay, wood, textiles, and foods as the materials, although any material that would readily lend itself to constructive activity was admitted as satisfactory. So much did these subjects stress manipulation that the experiences with the materials were often collectively called hand work. This term persists, even today, in some schools. But, in trying to find the actual life purposes that may be served by the study of the industries, the emphasis has come to be upon the practical, appreciative, and social values which may be derived from the study and not upon the training of the hands in manipulative skills. The general dexterity which is needed by anyone is adequately developed, but specific productive skills are matters of vocational education. The industrial arts as a study utilizes hand work as a means to help in developing meanings and values, as a way of clarifying ideas and cultivating appreciations. But the values for the hand work are kept clearly in mind, and they are very specific—they are not stated in terms of vague, disciplinary purposes. Investigative activities using experiments, excursions, and books play a part even more important than the manipulative activities

as such. The hand work is not less in amount than under the older plan, but it is very different in kind. All of the activities used—construction, investigation, and appreciative experiences—in the study of foods, clothing, homes, home furnishings, equipment, and all of the rest, are to bring out the problems, methods, and values for health, economy, and the development of taste and social understanding. The work strikes directly at the problems of daily life which, if well solved, tend strongly to make it a success; if not well solved, to make it a failure. While not the whole of a liberal education, of course, the study lies at the foundation of any education which makes one efficient and cultured. How can one be rated as liberally educated who does not know how to maintain health, who does not know the economic values of the materials used to maintain efficient standards of living, who does not have good taste, and who does not understand the social needs and methods relative to industrial production, distribution, and usage? In developing adequate conceptions of these values, and in cultivating habits and attitudes in achieving them, there are many problems simple enough for children of the first grade and other problems suited to the capacities and interests of children of all of the other grades, even to the upper years of the high school.

Inasmuch as interests in these industrial-social processes and products are common, contacts with them are constant, and problems connected with them are ever present in our daily lives, they form a constant source for school activities that are directly educative. Impulses to activity and needs for activity which can profitably be satisfied by studies in the industrial-social fields of life are also present in learners of any age within school years. Constructive impulses and play impulses may be most important at one time; art impulses at another; investigative impulses at another; and social impulses at still another, although all may be present in varying degrees at the same time. In an activity curriculum, therefore, industrial-social activities may profitably have a large place at any school level. Manipulative interests will tend gradually to diminish as most satisfactory and appropriate as we pass up the grades, while investigative and appreciative interests will correspondingly tend to increase for most pupils. All of these activities should contribute to induct the learner into an increasing participation in social life and to promote personal satisfactions and adjustments.

Apart from the specific values to be derived directly from the industrial studies as such, the activities in these fields uncover or reveal the needs for much of the subject matter constituting the proper content of arithmetic, geography, science, and history, and, to a less but important degree, parts of some other fields. Most of our real needs for the materials of arithmetic are those relating to the measurement of quantities and values of food, clothing, home supplies, and other material products; most of our geography of daily life is that connected with the sources of supplies—the markets, the routes of transportation, and our economic relationships to other regions and peoples; a very considerable part of the science we need is that which relates to the controls of biological and physical forces by which we produce and use industrial supplies and services; much of desirable history is that which helps us to explain the present conditions of life and the methods of human progress as these are revealed in the growth of the race from simple beginnings; and most of our art needs are those relating to our selection and usage of clothing, furnishings, and other supplies relative to qualities of good taste. Even in our music

and our literature are many examples which can be fully understood and appreciated only by understanding the industrial and social background out of which they came and of which they are the artistic expression. Activities in the industrial arts are indeed unique in the degree to which they form the natural avenues of approach to the development of interests, understanding, and appreciation in other fields or subjects.

Let this not be interpreted as advocating that the appropriate use of activities in the industrial arts means a "concentrated" curriculum with industrial arts as the core. No one field of life and education can be made a core around which all others are organized without producing a plan that is artificial and strained. One may well hold to the principle that industrial arts should receive a proportion of attention in school corresponding to the importance of the problems of the consumer and citizen relative to industrial materials and products outside of school—no more, and no less. This same principle should apply to all other fields—each kind of activity should receive emphasis in proportion to its importance in contributing to the purposes of life and education. The use of this principle would insure balance in the organization of the curriculum. So far no school has been observed or reported which gives more attention to the industrial arts than the use of the principle would justify. Most schools are giving far less.

It is believed that many of the difficulties of the activities curriculum would be readily overcome if only the analysis of the actual activities and problems of daily life as it is and as it should be to achieve measureably higher standards were made the basis of curriculum organization. This would require that the subject matter of the studies be fitted in to meet the needs of the activities, arranged in sequences adapted to the growing and changing needs of pupils as they advance in maturity and experience. Such an analysis would reveal the prominent place, among other interests and problems, of the variety of activities included in the field of industrial arts. Utilizing the physically active tendencies of young children, and no less their insatiable curiosity which may be both satisfied and developed by investigative activities, the work exactly fits their needs for physical and mental growth in ways that are social as well as individual. Utilizing the growing intellectual and social interests of upper grade children in questions which call for investigations by experiments, excursions, and reading along with some constructive enterprises, the industrial arts furnish activities making a continuity begun in kindergarten or primary grades.

Those working on an activity curriculum may be assured of very substantial help in solving many of the difficulties of such a plan if they will give to the industrial and other forms of practical activity the place to which they are entitled as measured by their importance in daily life. Any fear that the use of the practical experiences of life as the avenues of approach to further educative activities will make education materialistic in an undesirable measure is without foundation, if the goals of life and education as a whole are constantly kept in mind in giving direction to the activities. The kind of work here urged is that which makes directly for the development of thinking ability, moral values, and of both intellectual and æsthetic appreciation of those things which determine whether one's surroundings shall be satisfying or annoying, beautiful or ugly. Capacity to think, to arrive at sound moral judgments, to appreciate the good and the beautiful are fundamental elements of culture. The conduct curriculum develops ability to act as well as to know and to feel.

THE MOTIVATION OF HANDWRITING INSTRUCTION

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The problem of securing and holding pupil interest in handwriting instruction is very perplexing. It is doubtful if any other school subject offers equal difficulties in this respect. The detailed reasons for this condition are numerous, but in general they are largely stated in terms of the organization of curriculum, method, or standards.

Some believe this general lack of interest is intrinsic in handwriting since the skill is so artificial. The muscles of the arm, wrist, hand, and fingers, which are ordinarily employed in coarse movement and manipulation, are here adapted to the minute and painstaking task of constructing comparatively small characters by means of tools. The arduous process is in distinct contrast to the readiness of speech. Muscles which may be very freely and naturally used in gesture are trained to convey ideas in writing that could more quickly and satisfactorily be expressed by the spoken word. The requisite restraint and inhibition is felt to be extremely unnatural to the child, who desires simple, direct expression.

There is doubtless much truth in this point of view, although it is doubtful if handwriting is any more artificial than are many other school activities. In the face of these facts, however, the need for motivation is evident. On the other hand, children do not shrink from performing any task within the range of their abilities because of involved difficulty if they are vitally interested in it. Handwriting has a very definite appeal because it is an expressive art, and the interests of pupils may be won and kept on this basis. The great educational error appears to have been the making of penmanship into a special school subject and the separation of the learning of handwriting from its natural relation to written composition. Elaborate programs of specialized techniques have been developed, special periods set apart for mass practice, and detailed devices and methods employed, until handwriting often comes to be considered as the end in itself rather than a medium of expression. As a consequence, over-refinement and expertness are emphasized and the teaching of the subject becomes a highly specialized technique, with commercial systems of penmanship developed outside of the school ministering to the school needs.

Handwriting itself is not so artificial as are the prosy drills and technical methods which commonly characterize the instruction in the subject. Once such practices are initiated, the problem of motivation is intensified and made even more baffling. There is no easy way of arousing in the child a direct interest in the subject as taught, therefore indirect methods of stimulating interest prevail. One of the indirect methods is to make the required drills attractive through use of games and pictures. The running oval becomes a rolling hoop. Simple ovals combine to form puppies and kittens. In advanced stages elaborate designs and decorations are devised.

A very common method, and one used by the majority of teachers with good success, is the giving of rewards for good work. Many types of such rewards are used, as revealed by a survey of current practice.[1] Among these are noted: (1) Certificates of various types or diplomas signifying recognition of superior achievement, promotion, or graduation from the subject. (2) Special marks, stars or stamps placed on satisfactory papers. (3) Emblems for children to wear, such as buttons, badges, and ribbons. (4) Honor-rolls and star seats. (5) Valuable prizes such as pictures and silver cups for individuals or "teams." (6) Group competition. (7) Individual competition in organized contests. (8) Posting or exhibition of best papers. (9) Class vote on best papers or greatest improvement. (10) Handwriting club membership. (11) Election of best writer of each row as captain. (12) Excuse from writing drill for longer or shorter period, or conditional. (13) Special privilege of play, or permit to take story books to read. (14) Permit to do special copy work such as placing assignments on the board.

The artificial character of most of these incentives is apparent. The fact that so many types are used is significant of the unnatural factors that operate in the whole situation. They also testify to the ingenuity of educators in meeting a difficult situation. Many criticisms may be made of these indirect methods of stimulating interest. When the giving of rewards is overemphasized it may lead, not to a real interest in handwriting, but to a desire to gain a prize. In order to attain this end the child may improve his handwriting, but since he has never had any interest in the handwriting for its own sake, the skill attained is only temporary. When the incentive is no longer operative, the ability in handwriting deteriorates. Having had no general ideal of legibility, no effort is henceforth made to maintain any standard of legibility.

The giving of rewards proves no real incentive to many pupils who, in spite of their best efforts, can make no appreciable headway in the detailed skills. Group competition has some features which are better than merely the giving of prizes, since it introduces social aspects that may be cooperative and helpful. Each pupil may gain thereby a sense of his own responsibility in maintaining or raising the standard of his class. Many can be appealed to in this way to do their best, although others cannot thus be stimulated. The outcome of competition is no better than is that of rewards, since attention is not primarily centered on handwriting. Organized competition cannot be made perpetual, for this requires too much effort on the part of the instructor. It soon loses its appeal through the very fact of its commonness, unless it be given new forms. When carried to extremes, competition may result in antisocial attitudes and habits of conduct.

Excuse from drill when a certain standard has been attained is permissible only when it is conditioned on the child maintaining his standard in his daily writing. Such excuse presumes that the drill is distasteful and the privilege of *not writing* is associated with the gaining of mastery in writing, which is a manifest inconsistency.

The granting of special privileges when a certain stint in handwriting has been accomplished falls in the same class as rewards, unless such privileges include actual use of handwriting, such as the one noted above, "permit to copy assignments." The logical and psychological reward of learning how to write is the opportunity of using handwriting in some practical way.

[1] Paul V. West, *Changing Practice in Handwriting Instruction.* Journal of Educational Research, Monograph No. 9. Public School Publishing Co., 1927, pp. 73-77.

This cannot be regarded in any sense as freedom from handwriting, but a responsibility for doing one's best in giving evidence of skill already attained. In this sense it is an extended drill.

The direct method is far superior. It is unfortunate that so many indirect methods are in use when direct ones are possible. Although mediated interests may and to some extent should be used, there should be a definite effort made to arouse an immediate interest in handwriting itself as soon as possible, so that the artificial incentives may be eliminated.

Much time and effort should be expended in guiding children to an interest in good, legible, and even beautiful work in handwriting. The practical value of legibility should be constantly emphasized. At certain stages time used in giving this emphasis is more profitably spent than a corresponding amount of drill work. The law of readiness operates in securing the child's coöperative effort. When the pupil is made anxious to write well, half the battle for good achievement has been won. Some suggestions for arousing such an interest or mental set are here given.

Stories may be told or read which show the value of good penmanship. These may be real or invented. A story of Horace Greeley, the famous editor, is effective. He found an employee unsatisfactory and dismissed him. The man asked him for a letter of recommendation. Some time later another editor told Horace Greeley that he had been greatly disappointed in the reporter whom he had hired on Greeley's recommendation. The latter replied that he had indeed written a letter, but that it was far from being a letter of recommendation, for he had therein pointed out the man's failure and faults. The editor then confessed: "As a matter of fact I did not read the letter, because I could make nothing of it, but since the man carried a letter from your office I took for granted that it must be a recommendation and engaged the reporter without further question."

The story of the Declaration of Independence, how it was written so beautifully by Thomas Jefferson, is stimulating especially when a facsimile copy is shown. The evenness of the writing may be pointed out, also the shading, which was the result of the use of the crow-quill pen. Suggest that if Jefferson had not been able to write well he would not have been offered this great opportunity.

The story of Lincoln writing his famous Gettysburg address on the back of an envelope and other historic incidents connected with documents may be noted in some detail.

The story of the development of writing from hieroglyphs, which were pictures of things and events, later becoming pictures of sounds and taking the cursive form as in modern writing, and the relation of handwriting to art may be told in such a way as to arouse interest.

Other items susceptible to this treatment are:

Incidents of illegible prescriptions being filled wrongly, with disastrous results.

Letters forwarded to the dead letter office because of illegible address.

Letters being missent to California instead of Colorado because addressed *Col.* with the *o* resembling an *a*.

Business letters and notations written illegibly and thus leading to losses; for example, a note stating "Thirty days after date" being written so illegibly that it read "Thirty days after death."

Illegible bank checks leading to confusion of accounts and loss.

Wills and deeds which are misleading and wrongly interpreted because of poor writing.

Manuscripts for the printer which are illegible. Examples of inaccuracies due to

this cause are numerous. In a leading daily some time ago a headline declared "The U. S. Army Crossing Vast Desert Covered with Mosquitos." The reporter had attempted to write "mesquite," which is a bush found in desert country. A story once stated: "He was an unkept babe. A coarse beard covered his face," when it should have told of an "unkempt hobo."

Incidents of telegrams which the telegrapher cannot read accurately, and of personal correspondence which the receiver must labor over for a long period in order to make the content meaningful can be noted at length.

An ingenious teacher or supervisor can multiply such incidents and apply them as needed with good effect as a means of motivation for legible writing. Many instances of such illegibility can be selected from the actual writing of pupils in the school and stored away for future reference.

One of the surest means of holding interest of pupils is the close affiliation of handwriting with practical work in all kinds of composition. When this is done, much less emphasis need be placed on any kind of formal drill. Drill is necessary to some degree for all learners, but such drill should be the outcome of needs discovered in actual composition rather than a formal course of drill divorced from real writing situations. Even where a school program provides for such drill, there should be a constant emphasis on *applied writing* in all grades and most of all in the upper grades of the elementary school. The copying of poems, or writing of them from memory, reviews of books the pupil has read, the listing of names of famous men and women, and similar exercises might be substituted for formal drills to advantage. In the Detroit school system alphabetic paragraphs are invented by the pupils and used to emphasize and test the formation of capital letters. An illustration of this is:

A Business Concern Demands Every Fellow a Gentleman, Having Ideas Justly Kept. Live Men Need Opportunities Providing Quick, Rapid, Stern Tests, Ultimate Vigor, Work and Xcellent Yearly Zest.

Every school should make a survey of the possible needs for applied writing in the school and outside as well and tie these needs up with the handwriting instruction as closely as possible. Parents and others may be made interested in the enterprise of placing responsibility upon the children in the way of writing in such situations as the following: Family correspondence, checks and letters sent in payment of bills, statements of bills due, lists of purchases to be made, orders for supplies, invitations to parties, announcements, writing of business contracts, lists of names and addresses, and "want ads" or other material for publication.

Within the school abundant opportunity may be given for the pupils to express their skill. There are first of all the regular written assignments in other classes, as in spelling, language and history. Such work should be recognized throughout the school as real applied writing with no exception to best practice being tolerated. Notebooks in art, science and other subjects offer an incentive to good form. Examinations may stress speed as well as quality.

Extra-curricular activities provide many opportunities for keeping the child's interest in handwriting alive. These include: writing for the school publication, writing of school invitations, reports of special occasions, and secretarial reports of meetings. Much clerical work in the school, either of an administrative or instructional nature, may be turned over to the children who have gained a certain standard of ability. The copying of test questions for children of another class, the placing of material on the blackboard, arranging lists of reading books, alphabetical listing of pupil

names, the filling in of names on report cards, and making invoices of school supplies are forms of useful service which prove centers of motivation for handwriting. In all applied writing the emphasis should be placed on the task, not as a compulsory feature, but as a special privilege which the pupils may enjoy.

In place of competition of pupils with each other, a pupil may be led to compete with his own past record. When this attitude is initiated, the testing of handwriting becomes a coöperative enterprise of pupil and teacher. The child eagerly follows his own record, and undertakes practice with renewed enthusiasm. This is especially true when graphic records are kept by the child which indicate his progress in speed and quality as compared with the standard norms and the class averages. Interest may be increased by leading the pupils to take a share in the grading by the use of the handwriting scale, although care should be taken that the pupils' grades are not regarded as final.

Diagnostic and remedial work, when properly carried on, is an effective means of stimulating interest. When specific faults are pointed out by the use of charts, scales, or other plans designed to this end,[2] the specific goal to be attained is found to be a very good direct incentive. Pupils take intense pleasure in gaining the mastery of a particularly troublesome phase of their writing and in noting how greatly their handwriting quality has improved as a result. When such diagnostic work is tied up with the applied writing and especially when it is informally conducted as a supplement to such writing, and expressing the child's own felt need for improvement, it becomes a vitalized performance.

Drill is necessary, but it need not prove a boresome undertaking for either teacher or pupil. It is probable that the amount of drill may be greatly lessened if such motivations as are here suggested are employed. It is certain that the progress of individual pupils will justify any effort that may be made along these lines.

[2] Freeman, F. N., *Chart for Diagnosing Faults in Handwriting.* Houghton Mifflin Co.
Gray, C. T., *Standard Score Card for Judging Handwriting.* Public School Publishing Co.
Leamer, E. W., *Diagnostic Practice Sentences in Handwriting.* Public School Publishing Co.
West, P. V., *Remedial and Follow-Up Work.* Handwriting Bulletins: (1) Elements of Diagnosis and Judgment of Handwriting. (2) Correcting Faults Revealed by Diagnosis. Public School Publishing Co.

THE APPLICATION OF THE PROJECT TECHNIQUE TO A COURSE IN GENERAL SCIENCE

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In a very valuable book by Hosic and Chase entitled *A Brief Guide to the Project Method,* we find the following:

> A study of school projects will make clear that situations conducive to worthwhile projecting are sometimes hit upon by accident, sometimes planned by the teacher, and sometimes waited for. In order that a course of study may be carried out, the situations must, obviously, be mainly planned. Contrary to a too common belief, it matters little whether the teacher prepares the situation and suggests the purpose or whether the pupils hit upon it unaided. The important consideration is that they should clearly grasp the purpose and enter whole-heartedly into it. Obviously the greater the practice of initiative in purposing, the greater the growth will be in this respect. Hence the teacher will welcome the spontaneous suggestions of the pupils and aid in evaluating them. But he will adopt neither a policy of watchful waiting nor one of supine acceptance of whatever is offered. *The teacher will choose his leads.*

These authors have stated succinctly the heart of the project conception as applied to normal classroom situations in normally organized schools. Teachers who are required to use syllabi or courses of study handed down from above often imagine themselves tied hand and foot. They would like to teach by the newer methods, but the rock-ribbed requirements make of them mere henchmen. Some of these teachers are seeking an excuse for their comfortable complacency; others are the pitiable victims of an erroneous misconception of project teaching. Professor Kilpatrick, in his fundamental analysis of the project, has insisted that "purpose" is the essence. To say that purpose is the essence is equivalent to saying that materials of instruction should function in the solving of problems.

When materials of instruction are definitely prescribed, it becomes the first duty of the teacher to present the required materials in such a way that they will enter into the solution of problems of vital interest to pupils. The pupil may either initiate the problem or, through the skilful *leads* of the teacher, accept the problem which she has initiated. It seems to the writer that the logical next step in education is the specific interpretation of the problem principle in terms of school subjects. The following list of problems is offered as suggestive for the teaching of a course in elementary or general science.

Professor Dewey has furnished us with the basic philosophy of the project. He says, "Genuine interest consists in the identification of the self with the materials to be learned." The writer believes that normal children are interested in most of the problems submitted below. These problems also enable the resourceful teacher to present the materials of any required course in the elementary science field. The list of problems submitted below is the writer's answer to the question, "How can I prepare for Regents (or other definite requirements) and teach by the project?" The same technique applies to other subjects.

1. What do people mean when they say that clothes on the line "freeze dry"?
2. Why will water evaporate from a lake in Arizona more quickly than in New York?
3. In setting out plants, why should we take care to pack the soil nicely around the roots, but to leave the soil loosely packed about an inch from the surface?
4. Why are pans for evaporating water from sugar or salt large and shallow?
5. Why does sprinkling the lawns and streets on a hot day in summer cool the surrounding atmosphere?
6. Why do we feel cold in a draft?
7. The air is just as warm when we are riding in an automobile as it is when we are standing on the lawn. Why do we feel much cooler riding?
8. Why does not the tennis player feel the heat as keenly while he is playing as when he sits down?
9. Why should we be careful to see that all our clothes are dry and "aired" before putting them on?
10. Which will be cooler, a glass of water or a bottle of water standing on the table?
11. Why do people place a wet cloth over butter jars in summer?
12. Why is a healthy dog's nose always cold?
13. Why does the air feel so chilly in the spring when snow and ice are melting?
14. Why does the furniture come apart in a room where there is little humidity?
15. Why does the atmosphere in New York City feel cooler at 10°F. than does the atmosphere in Montana at 0°F.?
16. Why do people say that "dew falls"?
17. Why does an electric fan in a store window prevent frost or mist from forming on the window?
18. Where do the automobile tires, shoes, clothing, machines, and other articles which we use, go when they "wear out"?
19. What makes ice pitchers, cold water pipes, etc., sweat?
20. Why do eyeglasses become covered with moisture when brought into a warm room from cold atmosphere?
21. What becomes of the "cloud of steam" from a kettle of boiling water?
22. What is meant by, "The sun is drawing water"?
23. What makes water gurgle from a jug? How can the gurgling be prevented?
24. Why is it necessary to force a knife under the cover of a fruit jar before the cover will come off? What would be the effect on the cover if the air were removed around the jar?
25. Why is it possible for a fly to walk on the wall?
26. How does a fountain pen work?
27. Why are you able to walk with tennis shoes more easily in rough places than with high-heel shoes?
28. Why will a swinging door open slightly if some one opens a door quickly in another part of the room?
29. Why will not the cover of a preserving jar stay on securely if the cover is put on when the can is cold?
30. How far would a perfect suction pump lift water in your town?
31. Why does the barometer work as well inside as outside of a building?
32. Why does water stay in a bottle which is used as a drinking fountain for chickens?
33. What causes the noise when a thimble is suddenly removed from the finger?
34. Why does a balloon rise?
35. How high will water rise in a pump?
36. If water will rise only about 30 feet in a pump, how is it possible to get water from a well which is 100 feet deep?
37. Is smoke pushed or pulled up a chimney?
38. When will a balloon stop rising?
39. Why will a fireplace or stove smoke when the fire is first started?
40. What is the best way to "air out" a room?
41. Why is there always a wind near a large fire?
42. Why does the barometer drop as a "low" approaches?
43. Why does a kite remain in the air?
44. Why could Mark Twain tell how high up in the Alps he was by "boiling his thermometer"?
45. Why does water boil more on some days than on others?

46. Why will a heavy cover over a dish cause vegetables to cook more quickly?
47. Why is it impossible to boil eggs (hard) at high altitudes unless the cover of the kettle is weighted down?
48. What causes the water to rise in a coffee percolator?
49. Why are thermos bottles shiny?
50. Why should radiators be dark and rough?
51. Why do soldiers wear white uniforms in the tropics?
52. Why will snow melt faster under black cloth than under white?
53. Why are ashes helpful on ice?
54. Why, in the evening, is water warmer than the adjacent land?
55. Why will the bare earth become heated more quickly than earth covered with vegetation?
56. Why do we have an oppressive night after a muggy day?
57. Why is the bottom of a teakettle rough and black?
58. What should the sides of a teakettle be like?
59. How does the glass in a hothouse act as a trap to catch heat?
60. Why are the tops of mountains so cold, although nearer the sun than the valleys?
61. Why is ice packed in sawdust?
62. How does clothing keep us warm?
63. Why are stove lifters, oven door-handles, etc., made of coiled wire?
64. Why do animals have thick fur in winter?
65. Why does linoleum feel colder to the bare feet than a woolen carpet?
66. Why is it possible to set paper afire with a burning glass?
67. In taking bread from the oven, why will the hot pan burn your hand whenever it touches you, while the bread and the air of the oven do not, although of the same temperature?
68. Why may a glass rod be melted in a flame and held in the hand with perfect comfort a few inches from the melting place?
69. Why will mist clear from lenses surrounded with gold rims more quickly than from rimless glasses?
70. Why does the thermometer drop when first placed in hot water?
71. Why do pipes burst when freezing?
72. What makes a fireplace smoke?
73. Why do fish migrate into deep water during warm weather?
74. Why do little bubbles of air collect on the inside of a glass of water standing in a warm room?
75. Why do thick glass tumblers break when hot water is poured into them?
76. Why do thin glasses seldom break when hot water is poured into them?
77. Why does paper or bread curl up when heated on one side?
78. Why does popcorn pop?
79. Boiled water contains no air. Why will boiled water upon freezing cause a pipe to burst more quickly than water which has not been boiled?
80. Why is it poor policy to cover ice in a refrigerator with paper?
81. Why do vegetable growers often place tubs of water near their vegetables to keep them from freezing?
82. Why does the bottom of a kettle never melt when water is in it?
83. Why is water used in the radiator of an automobile?
84. Why is alcohol used in the radiator of an automobile in the winter?
85. Why do two pieces of ice stick after they have been squeezed together?
86. Why is a burn from steam at 212°F. so much more severe than a burn from boiling water at 212°F.?
87. Why must one be careful not to throw in a pile, waste and rags which have been used about an automobile engine?
88. Why must wood fires be arranged loosely in order to burn well?
89. Why is one able to stamp out a fire?
90. Why should one avoid cleaning cloth with gasoline in a room where there is a fire?
91. Why will a match go out without setting kerosene on fire if thrust down into the liquid quickly?
92. Why does a blue flame appear over a coal fire when the stove door is opened?

93. Why should the gas be turned down low after the water is boiling?
94. Why is heat lost if water boils violently and steam escapes around the cover?
95. How do the winds assist us in keeping the air pure in winter?
96. Why is it objectionable to have plants in a sleeping room during the night?
97. Why is ice-cream a great heat-producing food?
98. Why do thin pieces of potato become swollen when dropped into hot fat?
99. Why are there sometimes large holes in certain parts of the bread?
100. Why does water glass preserve eggs?
101. Why is water a good medicine?
102. Why is it possible for a person to float in water?
103. When you get into a rowboat, how much more water must the rowboat displace?
104. Why is it easier to swim in salt water than clear water?
105. Would a body a cubic foot in size, weighing 125 pounds, float in water?
106. Why is water more likely to enter the ear during a deep dive than during a shallow dive?
107. Why will a submarine float?
108. What must be done to make a submarine sink?
109. What would you do in case of fire?
110. Why is it necessary to attach fire engines to hydrants?
111. Why should flies be destroyed?
112. What relation to the house-fly has a leak in the sewage system?
113. Why should all rooms be well lighted?
114. Why do you cast a shadow?
115. Why do you see an image when you look at silvered glass?
116. Why do you not see an image when you look at paper?
117. Why is highly glazed paper bad for the eyes?
118. Why is it possible to see an image in the window?
119. Why do you shield the face with the hand when you wish to look into a room from the outside through a window when the sun is shining brightly?
120. How does the submarine captain see objects on the surface of the water by the aid of the periscope?
121. Why does a "bull's-eye" light look very large?
122. Why do fish look large in a globe-shaped aquarium?
123. Why are prismatic colors sometimes seen at the edge of window-panes?
124. Why do owls have difficulty in seeing during the day?
125. Why do owls see so well at night?
126. Why does the house seem very dark after coming in from outdoors where the sun is shining brightly on snow or sand?
127. Why is it necessary to have two eyes?
128. Why is it impossible to look directly at the sun?
129. Why do dark glasses assist us in looking at the sun?
130. Why is it difficult to see out of the window at night from a lighted room?
131. What kind of paper is best for living-rooms?
132. Why is it possible to light rooms by sunlight even though the sunlight does not come directly into them?
133. What causes the wavy appearance over a hot stove or over a sandy beach during a hot day?
134. Why is the ocean blue?
135. If you were given carbon lights, would you save any money by using them instead of Tungsten lights?
136. Why does the electric car move when the motorman "turns on the current"?
137. Why is it necessary to have electro-magnets in a motor?
138. When will lightning strike a building?
139. Why cannot static electricity be generated from an iron rod, since it can be generated from a glass or rubber rod?
140. Why are lightning rods pointed?
141. Why are people killed if they touch a live wire?
142. What do we mean when we say "15 ampere fuse" or "60 ampere fuse"?
143. Why is the electrolytic method of cleaning silver better than the polishing method?

144. Why are lights in a home wired in parallel?
145. What would be the effect if the lights were wired in series and one light went out?
146. What causes the "snap" of a whip?
147. Why would there be no sound of a bell in a vacuum?
148. Why does the wind whistle?
149. Why do telegraph wires hum?
150. Why does a person hear better if he places the small end of a megaphone to his ear?
151. Why does a person hear another better if the latter uses his hands as a trumpet?
152. Why does a dog prick up his ears when he hears a sound?
153. Of what advantage is it for a person to place his hand behind his ear when trying to hear a faint sound?
154. How does the violinist tune his violin?
155. Why are old violins said to be better than new ones?
156. Why are bass horns in the band larger than any cornet?
157. Why does one jumping from a height bend the knees when alighting?
158. Why do we have great difficulty in stopping when running down hill, especially when carrying a heavy weight?
159. If the valve is suddenly closed after water has been running from the tap, why will there be a noticeable thud?
160. Why is it possible to remove snow from the shoes by kicking the feet against the door-step?
161. When one shovels coal he swings the shovel of coal forward, then suddenly stops the shovel; why does the coal continue forward?
162. When a street car stops suddenly, the passengers lurch forward; when it starts suddenly, the passengers are thrown backward. Why?
163. Why is it necessary to start an automobile on low gear?
164. Is there any truth in the statement that "It is not the falling any great distance but the stopping quickly that does the injury?" Why?
165. Why does a rotary sprinkler rotate?
166. Why does the air remain on our earth?
167. Why do cream separators remove the cream from the milk?
168. Why is it not possible to write on blotting paper?
169. Why is it possible to mark on the blackboard with chalk?
170. Why is it possible to make a mark on paper with a lead pencil?
171. Why do some people place flour on a fresh ink stain on the tablecloth?
172. Why is it almost impossible to wash greasy hands with water alone?
173. Why does heating iron make it possible to weld it?
174. One leans forward in getting up from a chair. Why?
175. When one is standing in a swaying street car, he is more secure if he has his feet farther apart than usual. Why?
176. A canoe overturns more easily when a person stands up in it than when he is sitting down. Why?
177. Why is a tail placed on a kite to keep it from diving?
178. What is friction?
179. What causes the sun to seem to rise?
180. Why is the bowl of a compass made of brass?
181. Why does not the sun burn up?
182. Why does the moon have such a tremendous effect on our tides?
183. Why is the earth flattened at the poles?
184. Why did the earth become irregular in shape while cooling off?
185. Why are machines oiled?
186. Why do some machines have ball bearings?
187. What is a "hot-box"?
188. What is the result of friction?
189. Carbon monoxide is one of the gases from the exhaust of an automobile. Why should one always open the door of the garage before starting the engine?
190. How does a gas meter work?
191. How is it possible for a pitcher to curve a ball?
192. Why are hailstones round?
193. Why do leaves change color in the autumn?

194. Why do potatoes "boil dry" more quickly one day than another?
195. Why does cold air seem to come from a register when one is taking a bath?
196. Why are automobile tires not solid instead of air-filled?
197. Why is wax applied to a dance floor?
198. Why does an automobile back-fire?
199. Why do soldiers seem not in step to the music when seen at a distance?
200. Do snakes wait until sundown to die after they are beheaded?

THE CLEARING HOUSE

SOLVING PROBLEMS IN DRAMATICS BY THE LITTLE FOLKS

They had thrilled to each new adventure, as we traveled with "Boots and his Brothers" toward the palace of the king, these little folks in the High Second Grade, and they thrilled again as the successful Boots was awarded the king's daughter and half the kingdom.

Then their sigh of satisfaction changed to a breathless, "Let's act it," and their expectant faces brooked no denial. "Well," I temporized, "this is not an easy story to dramatize. You will need to make many things to do it well. Perhaps you can find another story to dramatize which you would like as well."

"We want 'Boots and his Brothers,'" came back the undaunted reply.

"Before you really decide," I suggested, "suppose you read the story to yourselves and make a list of all the things you will need. Then we will talk about it again."

For a few minutes nothing was heard but the turning of pages and the scratching of pencils; then they were ready.

"What do you need to make?"

"An ax," said one; "a spade," said another.

"Can you make an ax which would 'hew and hack,' and a spade which would 'dig and delve' all by itself?"

"The tree that made the palace dark."

"Why did the tree make the palace dark?"

"Because two chips grew when one was cut out."

"Can you make a tree which will grow two chips every time one is cut out?"

"Oh, yes, we can!"

"Very well; get your scissors and paper and do it."

How those children worked! With what patience and perseverance they tried and tried again. Finally, a cry of triumph, "I've got it!" and up to my desk came Virginia, her big brown eyes like stars, and proudly she demonstrated her model to the class.

She had cut out the trunk of a tree. On one side she had cut two short diagonal slits. Bending these backward as if on hinges, she had two "chips" which disappeared under the well-directed blows of her paper ax. Then, using her ax in a "hooking" motion, she brought the chips back into position. The spontaneous applause from the rest of the class banished her last doubt. Unquestionably she had won!

Soon afterward, a boy brought his model to the desk. He had tied his chips to a piece of string, the middle of which he had wound about his fingers. By striking the tree first on one side and then on the

other, he brought the chips into view and caused them to disappear. The class voted upon the merits of the two, and Virginia's model was chosen as the one most practical. The children understood they might present for the consideration of the class as many models as they wished.

On Monday morning Marion came straight to my desk when the children came in. "I have an ax that will 'hew and hack' all by itself. Only I have to go out into the hall and I need a ruler." A little later she slipped into the hall, and the class turned expectantly toward the door. It opened a tiny crack, and there appeared the head of a cardboard ax which slowly moved up and down, with at least no visible means of support. When the little inventor came in and received the homage of her class she casually remarked, "'Course if we can make the ax work, the spade will work, too."

Later, from her mother, I learned the rest of the story. On Sunday morning, while her mother and father were in the kitchen preparing breakfast, they heard a rustling sound at the door. Turning, they saw the head of a paper ax appear and move slowly up and down. Thinking the child was trying to frighten them, they entered into the spirit of the game, and exclaimed, pretending to be much frightened. To their great surprise there was no answering shout of glee. Puzzled, they tiptoed into the room by another way, and there found Marion squatting before the kitchen door, working up and down the handle of the ax which she balanced upon a ruler taken from her father's desk, and utterly oblivious to her surroundings. As they watched she slowly settled back on her heels with a satisfied, "It works!"

The next day Gregg, his blue eyes shining behind the thick lenses of his glasses, said, in his slow, drawling voice, "I've made two chips when one is cut off." He produced a cardboard tree, in the middle of one side of which there shone the brass head of a paper fastener. Suddenly a prong appeared projecting from the side of the tree; a sharp blow from the cardboard ax sent it whirling around and two prongs appeared. He had fastened to his tree a piece of cardboard that had one prong at one end and two at the other. Much practice had enabled him to spin it about at the slightest touch.

This invention of Gregg's the children voted better suited to their needs than the one Virginia had made. The one they made and used in the play stood three feet high, about one foot wide, and the top was cut to suggest a branch.

When the members of the cast were chosen, there arose a great argument. Some of the class were satisfied with three actors, Boots and his two brothers. Others demanded five in the cast. The readers were consulted, and after the story had been read and re-read, a princess and a king were added to the cast.

A new difficulty presented itself when rehearsals commenced. The story suggested conversation on the part of the king, but the direct quotations did not appear in the text. So, one afternoon during the reading hour, they wrote the part for the king, and to their great joy they found it supplied the lack which had threatened to spoil the play.

A few days later Marion brought into class another bit of stage setting which she had fashioned at home with some help from her mother and father. It was a long piece of cardboard upon which were drawn a number of trees suggesting a hillside. Near the top was a small hole into which she fitted a walnut shell. A piece of the shell was broken away on one side, and in the other a small hole was bored. The cardboard was bent to rest upon a small table, the upper part braced against

a flower bowl while the rest of the landscape hung down to the floor, the lower end resting in a tin pail, brought from home.

Then, 'mid the breathless excitement of the class, from behind the table she poured water from her toy tea-kettle into the walnut shell, and lo! as the water trickled out of the hole on the other side, we had the spring coming from a hole in a walnut, where it had been "trickling and running a long time," waiting for Boots.

The play was presented to the parents and their friends on the last day of school and was pronounced a great success.

HELEN M. LEACH,
Lakeview School,
Oakland, Cal.

RADIO AN EIGHTH-GRADE PROJECT

The senior eighth grade pupils returned to their home room after noon recess. Three boys rushed in late, each carrying under his arm a large, discarded radio battery which he had rescued from a neighboring trash can. Other boys gathered around to inspect the "treasures." The boys were told to put the batteries on the cabinet and to get ready for work. They did so reluctantly, lazy Bill saying, "Wish we might study about radio instead of old verbs."

"We may," said the teacher.

She soon learned how little she and the class knew about this interesting invention.

Later the home room teacher consulted the teachers of the various departments of this Platoon School, and submitted to them a suggested outline. Soon the radio study was well under way, and it far outstripped the suggested outline.

SUGGESTED OUTLINE

Library:

Collect available material from home and city libraries to supplement material in school library, to be used in references and research work in all departments.

Science:

Radio—what it is.
Why radio is useful.
Spread of use of radio.
Future possibilities with radio.
Radio, the Voice of the World.
Radio in emergencies.

Geography:

Map work.
Location of radio stations in United States.
Radio stations in other countries.
Longitude and time.

History:

Hertz, Henry, Marconi, DeForest, etc.
Radio in politics.
Radio in the World War.
Lecturers.

Spelling:

New words added to vocabulary.
Drill on words needed in written work.

Language:

Reproductions, original stories, radio rhymes.
Review of letter writing by correspondence with large broadcasting stations on subjects, such as, "Who pays for radio programs?"
Oral and written composition work.
How I Built My Radio Set.
Which Radio Concert I Liked Best.
Radio for "Shut-Ins."
Will Radio Develop an International Language?
Radio in My Home.
Debates.
Reports on visits to radio supply shops.
Radio game for younger children.
Compile Radio Book of work in all departments to be kept on file in school.

Civics:

Sharing with "shut-ins." Joy of sharing. Self-denial week. Candy and motion-picture money saved for fund with which to buy materials for making a radio set for Old Ladies' Home.

Arithmetic:

Review of practical measurements.
Review of longitude and time.

Drill on common fractions.
Problems involving purchase of materials for radio set to be built in Manual Training Department.

Drawing:

Blue prints for radio to be built in Manual Training Department.
Design for cover of Radio Book to be kept on file in school.

Manual Training:

Discussions: How to make a radio set.
Lecture and notes: How to make a radio set.
Visit to down-town shop.
Purchase of material.
Construction of 1000-area set to be presented to Old Ladies' Home.

Literature and Auditorium:

Development and production of class play, "Saved by Radio."
Play to be presented at annual banquet to seniors and parents given by Parent-Teachers Association at close of semester.

Music:

Radio and music.
Artists.
Variety of program.
Set to music stanzas written in English class.
Learn songs for class play.

Gymnasium:

Learn dances for class play.

Domestic Science:

Make costumes for class play.
Plan stage settings for class play.

Summary of Results:

Broad information about radio.
Sustained interest made the study of this interesting subject function in work of all departments. Backward children expressed themselves and learned, by doing, that they could do.
The great amount of review work required in eighth grade was enlivened and made less tedious.
Oral and written language improved greatly.
A democratic spirit was sustained in visits to homes which had a radio by children less fortunate. The joy of sharing with others was manifest.
A pleasing climax was reached at the Parent-Teachers' Banquet to the class when the class play was presented, in which every member of the class took part. Before the play was presented, a child representative of each department of the Platoon School told of the work with radio done in that department.

IDA T. ROBERTS,
Avondale School,
Birmingham, Ala.

AS REPORTED

THE N. E. A. AT SEATTLE

Plans are rapidly nearing completion for the summer meeting of the National Education Association, which will be held in Seattle, Washington, July 3-9. To those who are contemplating combining their vacation trip with a convention trip, the following suggestions are made:

1. Write the N. E. A. Publicity Committee, Chamber of Commerce Building, Seattle, Washington, for special descriptive booklets showing possible routes to and from the convention, side trips en route or out of Seattle, possible costs, and any other detailed information of this nature.

2. Make tentative reservations for rooms through A. J. Barash, Secretary Seattle Hotel Association, 414 University Street, Seattle, specifying the price room you desire, the number in your party, and possible date of arrival. No deposit is necessary.

3. If you might be interested in taking a special summer course at the University of Washington, thus combining your summer school, vacation, and a convention trip in the one big plan, write both Alexander C. Roberts, Dean of Summer Quarter, University of Washington, Seattle, and the Publicity Committee.

4. If you plan to go to Alaska, Honolulu, Mt. Rainier National Park, Mt. Baker, or make any other side trip, write or wire Convention Department, Seattle Chamber of Commerce, and they will have the proper authority get in touch with you immediately. This is very necessary, for capacity reservations are rapidly being booked.

These suggestions are made in order that every one interested in attending the National Education Association Convention in Seattle in July may have complete and reliable information just as soon as possible in order to make plans and avoid any possibility of disappointment.

CONFERENCE ON ELEMENTARY SCHOOL LIBRARY

There will be held at the University of Washington this summer, immediately following the meeting of the N. E. A., a conference on the elementary school library, under the joint auspices of the American Library Association and the Department of Elementary School Principals. The purpose of the conference is to crystallize, in a measure, the best thought of the country regarding this very important feature of the elementary school. It is the plan of the organizations which are fostering the project to make this the first of a series of biennial conferences which will be held immediately following the July convention of the National Education Association. During the alternate years, the high school library will be the subject of similar conferences.

Miss Lucile F. Fargo, General Assistant of the Board of Education for Librarianship of the American Library Association, and Principal William A. King of the Bryant School, Seattle, have been selected as leaders of this first conference, the dates of which are July 11-22. There will be thirty hours of lectures and classes.

For full information as to the content of the course, fee, credits, etc., address Dr. Alexander C. Roberts, Dean of the Summer Quarter, University of Washington, Seattle.

WORLD FEDERATION OF EDUCATION ASSOCIATIONS

In the April issue of this JOURNAL we printed a notice of the forthcoming Second

Biennial Conference of the World Federation of Education Associations, which is to be held at Toronto, Canada, August 7-13. We have been asked to call attention to the fact that in order to save delay, all communications regarding this conference should be addressed to the Chairman, Canadian Committee of Arrangements, 220 Simcoe Hall, University of Toronto, Toronto, Canada, instead of to personal addresses.

WORLD GOODWILL DAY

In July, 1923, the World Conference on Education at San Francisco set aside May 18 of each year for the purpose of bringing to the minds of children the world over the consideration of one great aim—friendship and goodwill. The object of this day is to build up a more wholesome patriotism for the people of each nation, based upon love of country and pride in the achievements of countrymen and race. Special programs in the schools will help to further this purpose. Songs, drills, pageants, special recitations, essays, and characterizations of great men and women may be used to good advantage on such programs.

Helpful suggestions for the observance of Goodwill Day may be obtained from the Carnegie Endowment for International Peace, 405 West 117th Street, New York City; World Peace Foundation, 40 Mount Vernon Street, Boston; and other similar organizations.

A PROJECT IN ESSAY WRITING FOR AMERICAN STUDENTS OF GERMAN AFFAIRS

Under the direction of a supervising committee, of which Professor Albert B. Faust of Cornell University is chairman, another essay competition has been launched by a group of prominent American citizens. In order to encourage a more careful study of an event of international moment, prizes have been offered for the best essays or articles on "The Significance of Germany's Entrance into the League of Nations." The paper may be written in either the English or the German language. There will be two separate contests—one open to college students, the other open to all persons not now in college who are interested in the study of German or of German affairs, and who are not over thirty years of age. The contest closes June 30.

For detailed information as to the regulations of the contest, address the Recorder of the Committee, Mr. Arthur Charles Watkins, Associate Secretary, National Council for Prevention of War, 532 Seventeenth Street, N. W., Washington, D. C.

PSYCHOLOGICAL ABSTRACTS

The American Psychological Association began the publication of its new journal, *Psychological Abstracts*, with the January, 1927, number. It is edited by Professor Walter S. Hunter of Clark University, assisted by the following distinguished cooperating editors from foreign countries: F. C. Bartlett, Cambridge University; V. M. Bekhterev, Leningrad; Ed. Claparede, University of Geneva; G. C. Ferrari, University of Bologna; A. Michotte, University of Louvain; H. Pierson, Sorbonne; M. L. Reymert, (formerly) University of Oslo; and W. Wirth, University of Leipzig.

The journal is international in character. It consists of noncritical abstracts of articles and books on psychological and cognate subjects, which appear as soon as possible after the original publication. These abstracts are prepared by competent psychologists in America and Europe. They are published in English, and average one hundred and fifty words each.

For information regarding subscriptions to this periodical, address H. S. Langfeld, Business Editor, Princeton University, Princeton, New Jersey.

THE READER'S GUIDE

PSYCHOLOGY OF ELEMENTARY SCHOOL SUBJECTS

It is a far but important cry from the older books on *methods* of teaching to this present volume on the *psychology* of elementary school subjects.[1] Between the old and the new can be seen the changing movement from teaching based on experience and opinion to teaching *and* learning based on experiment and science. While these changes have been taking place in the last ten years, the various studies which pointed the way have remained in scattered and fugitive form. Therefore, Professor Reed's book is a needed contribution, for the material now becomes available, in one volume, to every teacher.

The author has connected the various psychological studies with such laws of learning as repetition, association, and satisfaction. He has made it possible for a teacher to see the relation of the experiments to the problems of individual differences and the selection of habits to be formed. The findings relative to the following subjects are treated in this book: reading, arithmetic, handwriting, spelling, language, history, geography. Chapter XXII, "General Conclusions and Further Research," is an excellent lead for further study.

This book is not a method book and for that reason the classroom teacher will need to supplement the excellent psychological bibliographies with recent method books on various subjects. This is especially true in the chapters concerned with geography and history, where Reeder, Knowlton, and Hatch have made recent helpful contributions to method. The book will prove very useful to classroom teachers and to university instructors in the field of elementary education.

EMMA B. GRANT.

CHILD GUIDANCE

Child Guidance[2] treats of the everyday experiences of the normal child in a somewhat cheerful tone. In this respect it is unlike many recent books which deal primarily with problem aspects of child behavior and leave the average parent with a feeling of hopeless discouragement. Because parents have been asking for specific ways of meeting specific problems of behavior, writers in this field are attempting to formulate the kind of materials which are being generally demanded. This book, like others on the subject, aims to give specific advice as to how to deal with children in concrete instances.

In order to make the contents of the book practical and definite, the authors have attempted to state numerous pattern causes of behavior deviations and a few pattern ways of dealing with them. The assumption that child behavior can be classified under causal heads is questionable, but no one would question the basic principle of the book that behavior deviations are directly traceable to experiences which the child may have had.

The book is divided into three parts. The first section deals with specifics of learning, such as learning to sleep, learning to walk, learning to eat, learning to talk. Discussion of methods under these heads embodies much that should be helpful, the

[1] *Psychology of Elementary School Subjects.* By Homer B. Reed. Ginn and Company, 1927.
[2] *Child Guidance.* By Smiley Blanton and Margaret G. Blanton. New York: Century Co., 1927.

discussion of dawdling being particularly clear and direct. In the chapter on sensory training, the necessity for presenting materials through the use of the senses seems at times to be confused with the suggestion that senses might be trained to become more acute through practice.

The second section of the book is given over to more general content, such as the necessity for a nursery and suggestions as to the nursery equipment, special points to keep in mind in connection with the child's daily routine, methods of dealing with the problems of the mysteries of birth and death, of group adjustment, nervousness, intelligence, and the laws of discipline. One of the strong points of the book is the emphasis placed upon the child in his relation to the family as a whole. In this connection, the discussion of the nursery is particularly good. A separate nursery is advocated for all children in order that they may have a place which is free from the many over-stimulations of an all adult environment. Recommendations for play materials in the nursery should also prove suggestive to parents.

Part three of the book is devoted to suggestions for parental records of child behavior analyzed under such headings as self-confidence, aggressiveness, and social adequacy, with an outline plan for personality studies of children. Parents should find these suggestions helpful in defining the particular needs of the individual child. Such a record of individual variations should offset any tendency which a parent might have to try to fit his child into a stated mold.

Much of the content of this book is based upon established psychological laws of learning, but there are occasional recommendations which might be challenged, as some of the conclusions are in the final analysis but expert opinion. Until laboratory experiments with children have been greatly extended, leaders in the field of parental education must advise in the light of their own background of experience; but parents need to be educated to an appreciation of expert opinion as a helpful but variable guide.

BESS V. CUNNINGHAM.

TEACHING CHILDREN TO THINK

Much has been said and written about placing the emphasis more upon methods of study and thinking than upon the mere mastery of facts in educating children, but few teachers have had the courage and the skill to put the theoretically accepted conception into practice. In Dr. Helseth's report on a year's study of *Children's Thinking*[3] about questions of history, we have a record of such a procedure and the results in terms of both the growth in methods of study and the content learned as measured by history tests.

The study covered the period of a full school year, and was made with sixteen pupils, eight of grade seven and eight of grade eight, working together as a group in United States history. The class was early made to understand that it was free to discuss any question pertaining to United States history, and to use any method of studying and reciting that it thought helpful. But the fact was also made clear that the class was responsible for making good use of the time and for being able to give a good reason for anything it wished to do, and that its members must carry out, as best they individually could, any work assigned by the majority. The class must also carry to fair completion any problem it deliberately set itself.

[3] *Children's Thinking: A Study of the Thinking Done by a Group of Grade Children When Encouraged to Ask Questions about United States History.* By Inga Olla Helseth. New York: Bureau of Publications, Teachers College, Columbia University.

The book contains stenographic records at considerable length from each of six periods into which the year was divided, so that comparisons of earlier and later procedures can easily be made. Space permits but a brief statement of the more outstanding results.

In early September, the pupils sat passive, reciting when called on the words in certain parts of prescribed books. In May, they themselves introduced the problems on which they desired help in solving, using a wide range of extra books, magazines, and illustrative material to satisfy their own sense of what the problems implied. Books had also found a place in the recitation hour as well as in the study hour. The teacher's share in the spoken words of the classroom had been reduced from 60 per cent to 14 per cent. In the fall, the pupils had no questions except when the teacher required questions of them. By spring, the children were demanding consideration of questions which had arisen in their own minds during previous discussions or during activities outside the classroom. They saw their questions as the problems whose solution made American history. There was improvement in the pupils' abilities to solve questions proposed, and in formulating conclusions. Conscious attention to method was found possible, necessary, and natural. Freedom of choice carried with it the need of discussing critically how work had been done and how it should be done. The field within which the pupils planned gradually increased. The children gained speed in finding facts and in formulating the questions answered by a paragraph. They advanced from a very few ideas about how to study a chapter to many.

Growth in method of study and development of thinking ability are clearly evident and gratifying in amount as shown by the record and by tabulations and charts presenting comparisons from month to month. Did the pupils—in the usual sense—learn American history? Five standard history tests were given at the end of the year, and the average made by the class exceeded, except in one instance, the norms of the country for eighth grade pupils. In considering this result, let it be remembered that half of this class were seventh grade pupils, and that the average of the I.Q.'s of the whole group was 100.

Teachers and supervisors interested in methods of successful study—and that includes all of us—will find this record of procedures and results worthy of careful and thoughtful study. It is both stimulating and encouraging. While it confines itself wholly to history study, the principles which it illustrates will apply to every field in which life relationships and questions of relative value are prominent. We are all placed under obligation to Dr. Helseth for this practical demonstration of the possibility of cultivating in children under average conditions ability to do independent, constructive, and fruitful thinking.

F. G. BONSER.

SCHOOL SUPERVISION IN THEORY AND PRACTICE

Collings' recent contribution to the literature of supervision[4] will be welcomed by those supervisors who conceive education to be something other than the business of teaching "subjects" to children. It isn't that essentially, of course. But supervisors, nevertheless, have been at a loss for ways and means of judging it on any other basis. Our supervisory instruments, as a rule, have been intended to enable them to diagnose what the teacher is and what she does. Only a few have had to do with

[4] *School Supervision in Theory and Practice.* By Ellsworth Collings. New York: T. Y. Crowell Co., 1927.

children's activities and the measurement of educational results in terms of children's growth. Here is where Collings scores. At the outset, he writes down his educational point of view and thereafter rigidly applies it. Education is growth. The criteria of growth are activity, goal, drive, success, and "leading on." Teaching is thus good, bad, or indifferent only as it can be so denominated when these criteria are applied in judging it. They become accordingly the standards of supervision, for they are the supervisors' instruments in measuring procedures, grading the execution of teaching procedures, and measuring the improvement of teaching.

All this is thoroughly elaborated as a matter of theory. It is likewise thoroughly elaborated in supervisory practice. The use of the "conduct skill" is illustrated in numerous teaching situations, and the lesson is driven home again and again that its function is to measure not the teacher's performance primarily nor the children's ability to absorb subject matter, but rather the condition making for or against growth that these teaching situations reveal. A significant book, in that it sets forth a thoroughgoing plan of supervision based on the philosophy of "pupil purpose." We have had nothing quite like it heretofore.

SIGNIFICANT ARTICLES

RECENT INVESTIGATIONS

The contents of the *Journal of Educational Research* for March may be taken as typical of present-day tendencies in educational research. Professor Knight, of the University of Iowa, presents evidence to show the superiority of distributed practice in arithmetic. As the result of an experiment carried on with the number combinations, he concludes that when other factors are constant, well-arranged drill materials will produce markedly better results than can be obtained by the traditional means.

Professor Gray, of the University of Chicago, reports at some length upon an experiment in improvement of the teaching of reading which was carried on with the coöperation of the supervisors, principals, and teachers in Rock Island and Willmette, Illinois, and in a six-room village school in Thornton, Illinois. The investigation revealed that a much wider range of reading material should be provided for each classroom than is customary. Special effort was made in the experiment to train the teachers and supervisors in recent developments in the teaching of reading.

Other studies in this number are on "A Technique for the Construction of a Teacher-Training Curriculum," by Professor Charters; "A Report of a Controlled Study of the Learning of Multiplication by Third-Grade Children," by Professor Fowlkes; "A Plan for Rating Schools on the Basis of Efficiency," by Mr. Keener; and "The Gifted Child," by Miss Jensen.

READING IN THE HIGH SCHOOL

In the *Chicago Schools Journal* for March, Professor Monroe of the University of Illinois discusses the responsibility of the high school for the teaching of reading. He states that the results of silent reading tests show that many high school students are poor readers. It has been customary to charge this fault to the elementary school. The author thinks, however, that the difficulty is due in part to the technical character of the vocabularies used in high school textbooks. High school students were tested as to their interpretation of typical expressions used in social sciences and showed a lack of grasp of the meaning of the terms. The author believes that the elementary school should be expected only to develop a vocabulary for the common

needs of life, and that the high school must accept a definite responsibility for the teaching of reading, particularly the development of the special vocabularies needed in the various subjects.

HIGH SCHOOL COURSES IN THE MECHANICS OF ENGLISH

The results of a comparison of twenty-four courses of study dealing with mechanical phases of high school English are reported by Miss Sophia Camenisch in the *English Journal* for April. Writing as a member of the Essentials Committee of the National Council of Teachers of English, the author states that she found "a startling lack of uniformity with regard to stressing or even listing specific items [of the mechanics of English] that need to be mastered." There appeared, moreover, a distressing lack of definiteness in presentation, so that there was little effective guidance for the teacher in the courses examined. In a series of tables, the author sets forth the facts under such heads as the distribution of 21 details of English usage by grades and the frequency with which such topics as "the run-on sentence," "double negative," "end punctuation," and the like appeared in the various courses. The study concludes with a tentative program of essentials in the form of a table arranged by topics and grades (7B-9A). The main topics are as follows: sentence recognition and end punctuation, capitals, abbreviations, contractions, possessives, punctuation, grammar and usage.

THE RELATION OF CHILDHOOD BEHAVIOR TO MATURE CHARACTER

In an address delivered before the Kindergarten-Primary section of the National Education Association, which appears in *School and Society* for March 26, Professor Judd of the University of Chicago undertakes to combat the contentions of some recent writers to the effect that the major part of education takes place in the earliest years. The writer cites typical cases to show how emotions, such as fear, are affected by early experience. These are too often allowed to develop without any counteracting influences. Undoubtedly impressions received in early childhood are often of far-reaching importance in determining the later habits of an individual. Human nature, however, is never wholly fixed. Those who deal with the maturer years might well recognize the importance of infant attitudes and work for the proper adjustments. Attitude should be regarded as quite as important as subject matter in school training. Many of the most important objects of education cannot be identified with any one school subject. It should be remembered that the highest form of reaction to a given situation is of the indirect type called self-control. Such higher reactions come only with mature experience.

AN EDUCATIONAL PHILOSOPHY

In the *Peabody Journal of Education* for March, Professor Charles A. McMurry sets forth his philosophy of education. He defines philosophy as an attempt to interpret the universe in terms of a single principle. Education, moreover, is the best development of children in harmony with the needs of society. We may therefore describe education as a process of adjustment to environment. The old, fixed order of the world is passing away; we have change on every side. The school, however, has not kept pace. Its organization is not vital, though school and life have been drawing closer together. The main need is a fundamental principle of organization. This the writer finds in large, typical units of instruction. He admits that these units must necessarily be complex, but contends that children can

deal with them. Their great value is in simplifying the world order so as to make it understandable.

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